

## ABSTRACT

The invention provides porous biomaterials and methods for forming porous biomaterials. The porous biomaterials of the invention comprise a biocompatible polymer scaffold defining an array of pores, wherein substantially all the pores have a similar diameter, wherein the mean diameter of the pores is between about 20 and about 90 micrometers, wherein substantially all the pores are each connected to at least 4 other pores, and wherein the diameter of substantially all the connections between the pores is between about 15% and about 40% of the mean diameter of the pores. The invention also provides implantable devices comprising a layer of a biomaterial, and methods for promoting angiogenesis in and around an implantable biomaterial.